Remarks

Claims 11 through 23 stand rejected under 35 USC 103(a) as being unpatentable over Anderson '324 in further view of Cree '149. The Applicant respectfully disagrees with the rejection of independent claim 11 for the following reasons.

On page 3 of the Office Action, second to last paragraph thereof, the Examiner states:

> "Further, while Anderson does not explicitly disclose particulate superabsorbing material, Anderson recognizes the use of different type of wood pulp fibers (col. 7, lines 13 - 21) which would motivate one of ordinary skill in the art to substitute one type (fibrous) of superabsorbing material for another (particulate).

There are two aspects of this statement by the Examiner with which the Applicant respectfully disagrees. The first aspect concerns the assertion that wood pulp fibers are superabsorbing. Enclosed herewith is evidence in the form of a definition from the "INDA Nonwovens Glossary" of the association of the Nonwoven Fabrics Industry, Cary, North Carolina. The definition of superabsorbent (SAP) is absorbent material that can absorb many times the amount of liquid ordinarily absorbed by cellulose materials, such as wood pulp, cotton and rayon. Therefore, the definition clearly distinguishes superabsorbing particles from wood pulp thereby providing evidence that the two materials are not to be considered equivalents, even under a broadest most reasonable interpretation thereof. Superabsorbing materials typically absorb liquid in an amount of 20 to 50 times their own weight and thereby expand significantly in size. This is many times more liquid than wood pulp or other cellulosic fibers can absorb. The physical properties of the superabsorbing material also change radically with the superabsorbing material turning into gel-like

consistency (due to hydrogelling) when wet. The Applicant therefore respectfully submits that, even giving the terms of the claim their broadest reasonable interpretation, it is not permissible to consider the limitation of superabsorbent materials as reading on wood pulp fibers, since these two terms have acquired different meanings in the art and since their physical properties are very different, in both the wet and dry states.

The other aspect of the above-cited paragraph with which the Applicant respectfully disagrees is the position taken by the Examiner that it would be obvious to substitute particulate material for fibrous material. The Applicant disagrees with this position for the following reasons.

If a proposed modification or combination of the prior art would change the principle of operation of that prior art being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) (Claims were directed to an oil seal comprising a bore engaging portion with outwardly biased resilient spring fingers inserted in a resilient sealing member. The primary reference relied upon in a rejection based on a combination of references disclosed an oil seal wherein the bore engaging portion was reinforced by a cylindrical sheet metal casing. Patentee taught the device required rigidity for operation, whereas the claimed invention required resiliency. The court reversed the rejection holding the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate." 270 F.2d at 813, 123 USPQ at 352.).

Applying this case law to the particular case at hand, the Examiner's attention is drawn to column 1 lines 35 through 39 of the Anderson reference in which Anderson states:

> "Thus, a particular object of one aspect of the invention is to provide such a material which has a high absorbency and yet exhibits a wet strength compatible to its dry strength".

In column 5, lines 47 through 58, Anderson describes the mechanism by which this object is achieved:

> "The microfibers and the nature of their anchorage to the wood pulp fibers provide yielding "hinges" between the fibers in the final structure. The fibers are not rigidly bonded to each other and their connection points permit fiber rotation, twisting and bending. At even moderate microfiber contents, the structure is capable of providing textile-like properties of "hand" and drape, and is comfortable while retaining a degree of elasticity and resiliency. Even when wet with water, which softens the wood pulp fibers, the material exhibits flexural resiliency and a wet strength comparable to its dry strength".

Anderson therefore states that a main object of his invention is to provide a fabric having a wet strength comparable to its dry strength. Moreover, Anderson clearly identifies the mechanism by which this object is achieved. In fact, it is the microfiber/wood pulp fiber interaction per se which allows Anderson to achieve his stated goal. In the course of this interaction, the cellulose fibers and the microfibers become mutually entangled and wrapped about each other, thereby creating a nonwoven having a wet strength compatible to its dry strength in view of maintenance of the mechanical integrity of the microfibers in the wet state, despite the fact that the wood pulp fibers soften. Therefore, it is

the fundamental fiber-fiber interaction, which Anderson utilizes to achieve his stated goal of comparable wet and dry strengths.

One of average skill in the art, aware of the Anderson reference, would not be motivated to replace the wood pulp fibers with superabsorbent particles, since, in so doing, the fiber/fiber interaction responsible for the comparable wet and dry state strengths would no longer obtain in the modified material and the principal mechanism by which the Anderson reference functions would be destroyed. This would lead to a decrease in the wet strength, which is contrary to the intended goal of Anderson, and therefore the modification must be viewed as non-obvious in view of the above-cited case law. Moreover, since an entanglement between fibers and particles (contrary to fibers and fibers) is substantially inconceivable, one of average skill in the art would not expect the resulting matrix to be stable, since the superabsorbing particles would tend to evade capture within the microfiber matrix. For these reasons, all previous efforts to hold superabsorbent particles within polymer fibers attempted to "arrest" these particles by entirely melt-bonding the particles to the polymer fibers. (See discussion in the introductory portion of the instant specification).

In contrast to the teachings of prior art, the invention has discovered that by generating a material in which superabsorbent particles are entwined within a matrix of microfiber materials, wherein no or only few melt connections are provided between the melt-blown microfibers and the particulate superabsorbent, results in a fabric having a wet strength which is much larger than previous expectations for such a composite material. The invention therefore has advantages associated with particular structural limitations not suggested by the prior art of record and is therefore sufficiently distinguished from that prior art to satisfy the conditions for patenting with respect to 35 USC 103. These remarks also obtain for the other independent claims of record, which also recite these

features of independent claim 11. The remaining dependent claims inherit the limitations of the respective base claims and are therefore similarly distinguished from the prior art of record for the reasons given. The Applicant therefore requests passage to issuance.

Respectfully submitted,

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Date

Enclosure: 4 pages INDA Nonwovens Glossary

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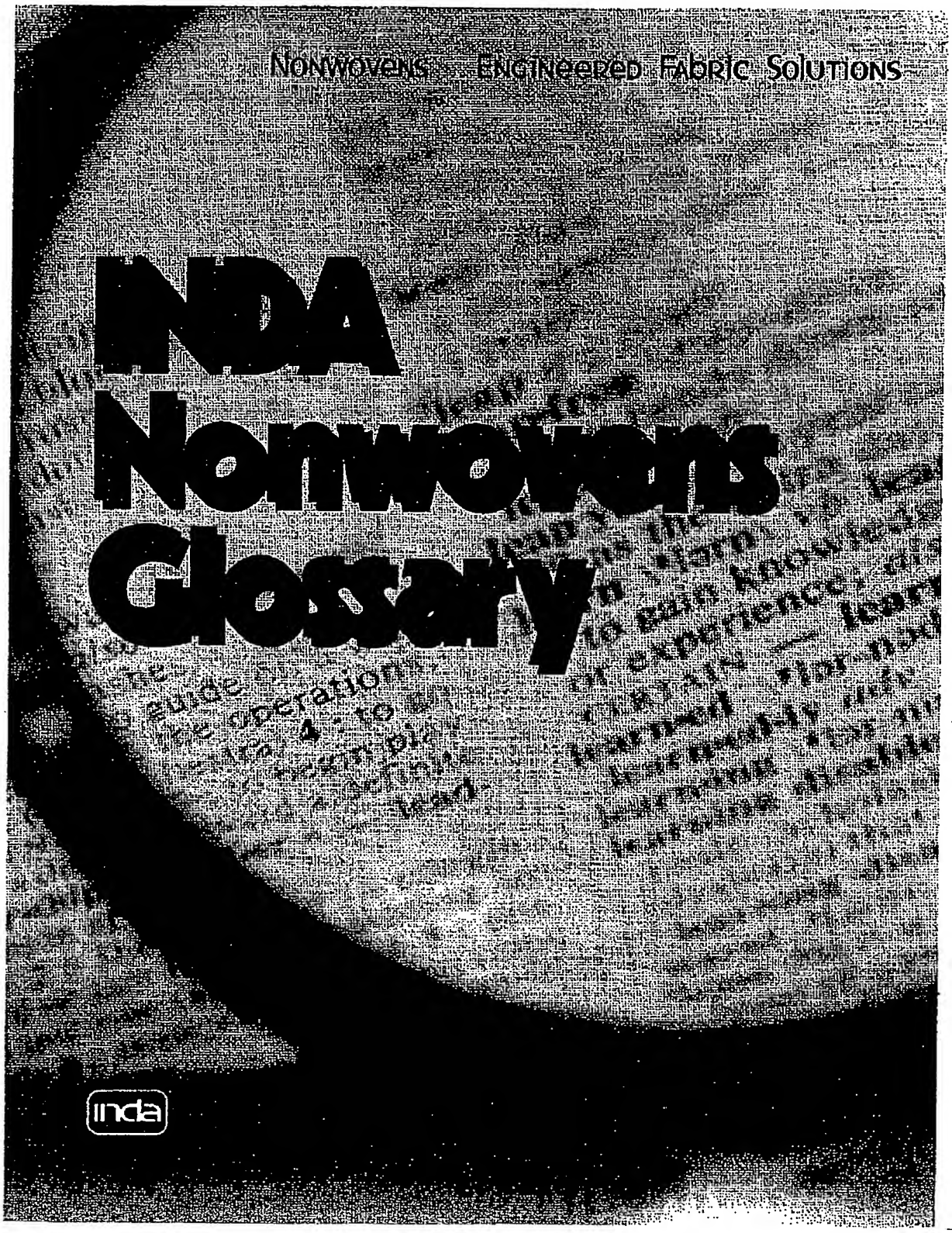
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Stretch
The ability of a fabric to grow in length when pulled.

Substrate
Fabric to which coatings or other fabrics are applied.

Superabsorbent (SAP)
A sorbent material that can absorb many times the amount of liquid ordinarily absorbed by cellulosic materials, such as wood pulp, cotton and rayon.

Surface charge
Electrical charge on a fiber or fabric.

Surface energy
The work necessary to increase the surface area of a liquid – generally expressed in dynes per square centimeter. Dynes are units of work.

Surface filter
A thin filter material that retains contaminants on the surface.

Surface tension
Forces acting between the molecules making up the surface of a liquid, causing the surface to contract to a minimum. Since it is a measure of the attraction of a liquid for itself, it can be related to its ability to mix with other liquids or to wet other surfaces.

Surfactant
A chemical additive that changes the surface attraction between two liquids, or between a liquid and a solid, by changing the surface energy of one or both components.

Swelling
Expansion of a fiber caused by exposure to a solvent or chemical agent.

Synthetic fiber
A man-made fiber, usually from a molten polymer or from a polymer in solution.